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## **Distance learning for maternal and child health nurses and midwives in Mongolia: a qualitative evaluation**

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### **Abstract**

#### **Background**

Continuing education is vital for the development of the competencies of nurses and midwives. We analysed the effectiveness of a distance education program for maternal and child health nurses and midwives in Mongolia, assessing its strengths and limitations and ways in which it could be improved. The aim of this research is to provide an analysis of the successes and failures of the program, in order to improve future versions of this and similar programs in Mongolia and elsewhere.

#### **Methods**

We carried out a qualitative descriptive study in Mongolia in August 2015. This consisted of three semi-structured interviews and two focus groups in the Second National Hospital, Ulaanbaatar, and three semi-structured interviews and one focus group in Dornogovi Provincial Maternal Hospital, Sainshand, Dornogovi province. In total there were 22 participants in our research. Data from the interviews and focus groups was thematically coded and analysed using NVivo version 10.

#### **Findings**

The distance education program is well received by participants. They suggest that it has improved their clinical practice and education in a number of areas, and are anxious for the program to continue. A number of alterations would be necessary to improve both the quality of the program and the ability of participants to foster change on the basis of what they have learnt. This provides challenges for both the program organisers and the providers of maternal and child health services in Mongolia.

#### **Implications for Nursing and/or Health Policy**

The success of the distance education program suggests that collaborations of this type are a cost-effective method of disseminating best practice in policy and practice to improve the quality of care provided to mothers and children in low-resource settings.

#### **Conclusions**

A distance education program is vital to link maternal care providers in Mongolia to new trends in care. Mongolia's relative isolation means that this program is particularly valuable there. However, the program could work equally well in other developing country settings.

#### **Keywords**

Mongolia, distance education, nursing, midwifery.

## **Background**

Continuing education is viewed as a vital part of both the professional development of nurses and a method of ensuring the health needs of populations are met (WHO 2010; Tyler-Viola et al. 2013). Despite this, in many countries nurses suffer from a lack of opportunities to participate in continuing education programs. Unsurprisingly, this problem is most acute in developing countries, including Mongolia (Kildea et al 2011). This paper analyses continuing education for nurses and midwives in developing countries, and in Mongolia more specifically, and describes the factors influencing the provision of nursing and midwifery care in Mongolia. It goes on to analyse a program set up in 2008 with the intention of improving access to up-to-date knowledge for maternal and child health nurses and midwives in Mongolia, especially in remote areas. This program, which consisted of web conferences via World Bank Satellite facilities and face to face seminars, was planned and conducted by a partnership comprised of Kitasato University – Center for Nursing Career Development and Research, The World Bank Tokyo Development Center, the Ministry of Health of Mongolia, Mongolian Nursing Association and the World Health Organization (WHO) from 2008 to 2013. The distance seminar programs were delivered a total of six times in the capital city, Ulaanbaatar, and three universities in remote areas of Mongolia: in Darkhan, Dornogovi, and Gobi Altai provinces. All seminars used a video conferencing system, connecting six sites in four cities in Mongolia. These seminars were also webcasted for a larger audience.

The objectives of the program were fourfold. First, to strengthen and broaden the continuing education program for outreach to maternal and child health (MCH) nursing professionals. Second, to provide international standard knowledge to enhance MCH professional competencies, especially observation and risk assessment and emergency management skills. Third, to close the knowledge and information gap between rural and remote areas and enhance the communication between them. Fourth, to introduce health education methods and materials for the population, focused on risk prevention and health promotion where health resources are scarce.

This article aims to analyse the factors underpinning the successes and failures of this program, in the context of the need for greater opportunities for continuing education for MCH nurses in Mongolia and countries facing similar challenges elsewhere in the developing world.

## **Continuing education for nurses and midwives**

Griscti and Jacono (2006) define continuing education for nurses as ‘any post-basic nursing education aimed at actively engaging nurses in a lifelong process of learning, with the ultimate goal of improving healthcare delivery and patient outcomes’. Clark et al (2015: 55) identify three interrelated benefits of continuing education for nurses in developing countries: ‘(1) improved nurse retention and decreased outmigration, (2) increased job-related motivation, and (3) greater professional identity and unity.’

There is, of course, a negative aspect of this, which is the impact of lack of opportunities for continuing education for nurses. The most important of these is brain drain, which refers to migration of nurses from poorer to richer countries, and from rural to urban areas and public to

private sector within countries. A number of pieces of research point to lack of continuing education being a factor underlying brain drain, both between countries, predominantly from developing to developed (Kirigia et al. 2006; Willis-Shattuck et al. 2008) and from rural to urban areas of all countries (Dussault and Franceschini 2006). Indeed, Willis-Shattuck et al (2008) argue that continuing education acts as a motivator to remain in underserved rural areas.

In Mongolia, Kildea et al (2011) suggest that many midwives view the lack of opportunities for continuing education and degree- or postgraduate-level education (Mongolian midwives require only a diploma to practice (WHO, 2013)) as a big problem. Midwives' scope of practice was viewed as very narrow and not in line with international standards (Kildea et al 2011).

## **Mongolia**

Mongolia is a large country situated in East Asia, bordered by Russia to the north and China to the west, south and east. It has a small population (approximately 3 million people) and is the least densely populated country in the world (WPRO 2013), leading to some unique challenges for the Mongolian health system. Mongolia has experienced rapid change since the fall of the Soviet Union in 1990, of which it was a client state. In particular there was a significant reduction in healthcare expenditure, which only began to rise again in the late 1990s, and an increased role for the private sector in recent years (WHO 2013). Mongolia is currently going through an epidemiological transition, with non-communicable diseases such as cardiovascular diseases, cancer and injuries now the leading causes of mortality (Government of Mongolia 2005). Total fertility rate in 2003 was 2.0, down significantly from 6.4 in 1980 (Government of Mongolia 2005). This had risen again, to 2.4, by 2013 (WHO 2015).

The under-five mortality rate fell from 108 per 1000 live births to 32 by 2013, and the maternal mortality rate (per 100,000 live births) fell from 100 to 68 in the same period (WHO 2015), indicating significant improvements in healthcare service delivery.

## **Nursing and midwifery in Mongolia**

Mongolia has a doctor/nurse ratio of 1:1.2, very low by international standards, reflecting the relatively low status of nursing (Hill et al 2006). The low numbers of nurses (and midwives) makes the health system inefficient and expensive (WHO, 2013). The government has recognized this, and seeks to change this ratio to 1:3 (Ministry of Health, 2009, in WHO, 2013). However, this seems unlikely to occur whilst remuneration for nurses remains low (WHO, 2013).

Mongolia is heavily dependent on medical staff (particularly specialist obstetricians) for uncomplicated births, and has not invested in the development of midwifery (Hill et al 2006). There are a number of different cadres of midwives and others involved in the care of mothers and newborns, which are summarized in Table 1. Feldshers, or community health workers (Como and Batdulam, 2012), are a key part of Mongolia's health system, and there are significantly more feldshers than midwives (2393 feldshers and 615 midwives) in Mongolia (Kildea et al 2011).

Table 1: Mongolian maternal newborn health workforce and their role. Source: Kildea et al 2011.

Maternity rest homes are a central part of Mongolian policy, and the government has a goal of 75% of rural women attending a maternity rest home during pregnancy (Government of Mongolia 2005). Antenatal care, birthing services, drugs in pregnancy and postnatal care are all provided free (Kildea et al 2011).

### **The distance education program**

The program ran from 2008 until 2013, and the entire seminar program and its contents were approved by the Mongolian Government. All seminar credits were therefore eligible to be used as part of the 30 credits required for the renewal of the national nurse's license, which is required every five years. This attracted many participants, especially those who live in remote areas where there were very few opportunities for continuing education.

The total number of participants in six seminars was 3,500, which was equivalent to about 40% of all nurses in Mongolia. Connecting remote cities to the capital Ulaanbaatar made a significant contribution towards expanding outreach to those MCH professionals who had never had similar opportunities due to inability to afford transportation, accommodation and time for travelling, or someone to replace them while they were absent.

The participants in the program gained large amounts of practical knowledge, and the application of the learning in participants' workplaces has been significant. Direct impacts have been reported including the development of continuing education programs in local hospitals and clinics, the establishment of a new parents' education and preparation room at a national MCH center, introduction and use of the Maternal and Child Health Handbook, the adoption of program contents to the curricula of undergraduate training program at National Universities and the raising of awareness of international standards of MCH care and professional competencies.

The blended seminar program series has contributed toward improving several MCH indicators such as fetal distress, maternal mortality or injury at the time of delivery, as well as achieving the Millennium Development Goals' (MDGs) prime target of reducing child mortality by two-thirds. It also introduced the importance of psychological issues, such as care for mothers with depression, or those who experienced the loss of their baby during pregnancy or delivery. The program itself has been the subject of prior published analysis (Yoshino et al 2015).

A simulation of the costs associated with organizing this program in face-to-face mode shows that the distance-learning mode adopted costs 1/6 of what it would cost to deliver the same program in a face-to-face mode and can save a total of \$33,300USD over a five-year period. Furthermore, it can save 60 days of experts' time. This shows that delivering this program in distance-learning mode is far more cost-effective than face-to-face teaching.

### **The study**

#### **Aim of the research**

The main goal of this research was to analyse and understand how the distance education program was experienced by Mongolian nurses and midwives. In this, therefore, we sought to gain an understanding of the working lives of the participants, and how the program had enabled them to foster change in their places of work, or what had prevented them from doing so. A further goal was to assess the strengths and weaknesses of the program, with a view to assessing how it can be improved for future iterations.

### **Design**

A qualitative descriptive research design was employed. We adopted this strategy because we were interested in providing a detailed but low-inference description of the phenomenon under study using a purposive sampling technique (Colorafi and Evans 2016). Our research design also has overtones of phenomenology, in that we were interested in how participants had engaged with the distance-learning program and how they made sense of it in the light of their own experiences (Lopez and Willis 2004). We were also interested in the way that participants had used the program to make changes in their workplaces, both in terms of their attitudes and the care they delivered. We sought to limit our preconceptions about the experiences of participants, instead phrasing questions in a way that allowed participants to explore their own understandings. The fact that one of the researchers had been actively involved in the provision of the distance learning program made this difficult, but remained a guiding principle of our research.

### **Sampling**

Sampling was purposive, in that only those who had participated in the distance-learning program could participate in the research. Recruitment was done through the Mongolian Nurses Association, via their network of 21 branch offices across Mongolia. Anyone who had completed any aspect of the distance-learning program was eligible to take part.

### **Data collection**

All authors travelled to Mongolia in August 2015 to carry out an analysis of the effectiveness of the distance education program. We were in Mongolia for approximately ten days and during that time conducted seven in-depth, semi-structured interviews and three focus groups discussions (FGDs). These were conducted with head nurses and midwives at national and provincial hospitals, and also nursing and midwifery faculty from all national universities. The first focus group took place at the Second National Hospital in Mongolia's capital city Ulaanbaatar and consisted of six female health professionals. The second focus group was at the same location and consisted of five health professionals, both male and female, one of whom was also a teacher of nursing. The third focus group took place in Dornogovi Provincial Maternal Hospital, Sainshand, Dornogovi province and included four female health professionals: one doctor, two nurses and one midwife. Sainshand is located in the Gobi desert, in the far south-east of Mongolia, close to the border with China.

The interviews and focus groups took place in Mongolian with translators. The interviews and focus groups were transcribed verbatim in Mongolian before being translated into English by the translators.

The data collection took place in conjunction with a national symposium organized with local partners, which was connected by a video-conference system to 17 out of 21 Mongolian provinces. In the symposium, one delegate from each of four different provinces who participated in the program shared their experiences of the distance education program and the changes that had occurred in their teaching and practice over the time the program had been running.

Below are examples of the sorts of questions asked during interviews and focus groups:

- How many seminars did you participate in?
- What were your motives for participation
- What were your expectations?
- How did you find the seminars overall?
- What could be done to improve them?
- What changes have you made as a result of the distance education program?
- How has your teaching changed as a result of the programme?
- What challenges did you face when trying to change the situation at your clinical site?

### **Rigor and trustworthiness**

Shenton (2004) identifies a number of different elements that contribute to four discrete elements of trustworthiness in qualitative research: credibility, transferability, dependability and confirmability.

The first element that requires discussion is triangulation. We used two different methods of data collection, individual interviews and FGDs, which generate different types of evidence (Shenton 2004). We also engaged in triangulation through the use of a wide variety of informants; participants in our research included nurses, midwives and teachers of both of these groups. Our participants were drawn from all levels of the hierarchy, from those with limited experience to some who were leaders in their fields. Lastly, we engaged in site triangulation, by conducting research in different contexts, to ensure that the participants came from different contexts within Mongolia.

Secondly, as recommended by Shenton (2004), we had a good understanding of the culture of the participating organisations before the start of data collection. The lead academic for the distance-learning program (YY) has had links with the Mongolian Nurses Association (MNA) since 2003. Collaboration between YY and many Mongolian nurses developed over a number of years, mainly through organization and delivery of the distance-learning program, which was initially delivered on the basis of demand from individual nurses.

We must, however, acknowledge that the strong links between one member of our research team (YY) and the organization and some of the individuals involved in the distance education program could have had an impact on the responses from participants. One way in which we mitigated the potential effects of this was to use a variety of different data collectors, four in total. Analysis of the interview and focus group transcripts suggests that the participants did not give more positive answers to YY than to the other members of the research team.

Thirdly, Shenton mentions 'member checks' to strengthen the argument, something Guba and Lincoln (1989) consider to be the most important provision to bolster a study's credibility. In our research, the findings were shared with a number of the participants in the study. The responses we received indicate that we have captured the main points made in the interviews and FGDs.

### **Ethical considerations**

Ethical approval for conducting this research was granted by the Research Ethical committee at Kitasato University School of Nursing, Japan, with reference number 27-6, on July 24, 2015. All participants were fully aware of the purpose of the research and the way the results would be disseminated. All of the participants had engaged with the distance-learning program prior to the interviews and had a good understanding of its purpose. All participants gave written consent to participate in the research.

### **Data analysis**

Each interview was transcribed in Mongolian before being translated in English. The data was imported into NVivo version 10 qualitative data analysis software. This enabled the authors to categorise the data before a process of coding took place. The data was assigned to one of nine codes using an inductive, thematic coding process, in which the nodes emerged from the data, rather than fitting into a pre-existing coding frame or the researchers' analytic preconceptions (Braun and Clarke 2006). Themes that captured something important in relation to the overall research question were identified (Braun and Clarke 2006). These were: challenges; changes; content; how to improve; participants; reasons for participation; recruitment of participants; resources; and usefulness.

Thematic analysis is suitable for techniques such as qualitative description that employ a relatively low level of interpretation of data (Vaismoradi et al 2013). We were keen to ensure that the participants' voices came through clearly in the final article, so we did not seek to overly theorise or interpret the data collected (Colorafi and Evans 2016; Sandelowski 2010). This enabled us to follow the beliefs and experiences of the participants, rather than using pre-conceived notions of what we thought was important. The data from the interviews and the FGDs was analysed together. The coding process was undertaken by the lead author (CW) but was discussed at length with the other authors at each stage of the process.

### **Findings and discussion**

It is clear from our analysis that the distance education program was extremely well received. Participants were attracted by a variety of different elements of the program. The first was the opportunity to learn about nursing and midwifery practices from a developed country, namely Japan. Critically, however, participants perceived Japanese culture and values as similar to Mongolian culture, so there was less of a cultural leap in practice than might have been expected had the program been based on the European or North American system.



In the following sections we will outline changes the participants have made as a result of the program, barriers to achieving change, and some plans for improving the program for the future.

### **Changes made as a result of the program**

A large number of participants reported making changes to their clinical or teaching practice as a result of the distance education program. A number of these changes were simple alterations to procedures and practices to reflect international norms, and use of various guidelines to provide comfort and ensure safety through improved quality of care, such as recommendations around the comfortable positions during labour, giving emotional support, and the use of birthing balls and massages.

Clinical competencies have been enhanced, such as evidence-based clinical observation and risk assessment throughout pregnancy and the postpartum period. Emergency management skills have been improved, including development of manuals and clinical guidelines, and their implementation in direct care. Introduction of relaxation and comfort care for mothers during labour has also been strengthened.

Midwives and nurses are now trained on preventing procedures, early detection by observation and bleeding management. Also they are now skilled with first aid before the doctor's arrival, how to check the vital signs and using injection etc. By all effort, no maternal deaths were caused by bleeding at our hospital last year (In-depth interview participant).

One particular issue that was mentioned by participants in the research was the importance of the distance education program in raising awareness around issues of post-natal depression and psychosis. This had not previously formed part of nurses or midwives' training in Mongolia, and resulted in changes to education and clinical practice from a number of participants:

Giving mental support for mothers to be strong, say, psychological caring, putting them in the right track psychologically and being patient towards their families. Not being angry and being positive and giving advice. From the program I learnt about eliminating pain and mental support. It has influenced me a lot. (In-depth interview participant responding to question about how the seminar program had influenced her care).

Nurses and midwives also commented on the changes they had made to the way they interacted with patients. This focused particularly on establishing positive relationships with patients, in line with usual practice in Japan. A number of participants mentioned not being angry with patients and instead trying to listen and understand mothers sympathetically.

I see that [nurses'] attitude has changed. The people who were harsh, they realize that they should be more positive and soft in their communication and attitude toward patients. Before, there was much harshness, and anger in nurses because of their work. Now their attitude has softened (in-depth interview participant).

There were also other impacts of the distance education program, notably in the sharing and dissemination of information to colleagues who had been unable to attend, and also in the

development of groups of participants in ways that point to the formation of embryonic Communities of Practice (CoP). A CoP can be defined as 'groups of people informally bounded together by shared expertise and passion for a joint enterprise' (Wenger and Snyder 2000). In Mongolia, CoPs have been established in various settings for sharing accurate knowledge and information, by using and sharing lecture notes on the Moodle knowledge-sharing platform.

In one hospital, each attendee prepared materials from the session for a smaller conference that took place in the hospital, in which the materials were adapted for the Mongolian context by local leaders.

A number of participants in the research were teachers of midwives and nurses. Alteration of the content of courses in Mongolian nursing and midwifery schools was difficult, due to the lack of autonomy given to teachers, but there was enthusiasm for different methods of learning. This particularly involved a less didactic and more participatory method of learning, increasing the involvement of students.

Before lecture I was just show the slides, and speak fast. But from distance learning I started to know how to teach focusing on the student, even in the lecture bringing something to show, to give them to try, making students more active in the lesson ... Before I just show the slides and go on.

### **Barriers to change**

Despite the successes, there were a number of challenges that had to be overcome for the nurses and midwives to attend the program and to ensure that what they learnt was implemented in their workplace. The first and most important of these lies in the structure of the Mongolian health system. In Mongolia all births must be overseen by an obstetrician. There is, therefore, limited scope for midwives to alter the clinical situation in which they work, making some of the knowledge acquired through the distance education program difficult to apply. Participants highlighted the importance of providing education in order to assist midwives to deliver without the supervision of an obstetrician. While the policy demanding the presence of an obstetrician remains, however, it is debatable how useful this would be.

In Mongolia, there should be a regulation that allows midwives to make labor. Right now it is difficult to implement since midwives doesn't have right skills and knowledge (midwife, in-depth interview).

Nurses, midwives and teachers of both these two cadres of workers were positive about the impacts of the distance education program, but some expressed doubt as to whether their learning could translate into sustained changes in their workplaces. A number of reasons were given for this.

A number of participants mentioned the continuing influence of the Soviet-influenced education and health system on contemporary Mongolia. This referred both to the centralized, top-down structure of the health system and also the outdated nature of much of the equipment being used. Both of these characteristics were seen as barriers to improving the quality of maternal and child health services in Mongolia.

There remains influence of the Russian health system and education system, which does not allow nurses and midwives to [deliver babies]. Health policy, system and education has to be changed – midwives and nurses [currently] have no right to change it, and are under the control of doctors (nurse, in-depth interview).

The centralized, hierarchical structure of Mongolian health and education means that the ability of participants to make changes based on their learning in the distance-learning program is partly dependent on their own position. More senior staff will be more able to use their learning to foster change. This can be illustrated through the comparison of two nursing teachers. The first, who was very senior in her institute, articulated that she would find little difficulty in changing the nursing curriculum in her university to accommodate issues and practices that had been learnt on the distance-learning program, simply by making the changes herself. By contrast a more junior colleague noted that she would only be able to change 15% of the nursing curriculum, and that this would have to take place through a formal application process.

A large number of technical and equipment-based problems in Mongolia were noted, meaning that what was taught was impossible to adopt on outdated medical equipment. This highlights the need for context-specific teaching, in which teachers are aware of the lack of specialist equipment and can tailor their teaching accordingly. Some participants have also commented on the poor quality of the translation of some handouts. There were also some logistical issues, such as nurses attending the distance education seminars after a full night shift, or the seminars being announced very late, so it was difficult for attendees to organize their schedules:

Most of the people would be coming from their shifts in the night, without sleep. So, some people would be tired because of the whole night work, but nurses are very tough. This is something that we need to work on (midwife, in-depth interview).

Participants also noted that there is great need for feedback mechanisms after the video conference, including monitoring, supervision and a follow-up system. The video conference focused on knowledge sharing, while many participants were expecting more practical teaching to strengthen their clinical competencies.

Lastly, some participants noted problems with the teaching itself. It was suggested by one participant that the teaching should be competency rather than knowledge-based, and focus on clinical skills rather than theoretical knowledge. Other issues included the dissemination of course materials in English as opposed to Mongolian, and technical issues such as only being able to see rather than hear the teacher and the lack of educational materials to accompany the teaching.

### **Future plans**

Our research indicates that it will be very important to improve the quality of the distance education program. A key element of this is the opportunity for participants to directly question and engage in discussion with teachers, rather than simply being the passive recipients of information. It is clear that a method of providing teaching that allowed simultaneous response and a direct two-way link between teachers and students would be extremely valuable.

Participants were also enthusiastic about teachers coming to Mongolia to deliver teaching face-to-face.

A large number of specific topics or issues were mentioned by participants as being important for future iterations of the program. These include the possibility of broadening the program to include public health, focusing the program on international standards in a variety of areas, provision of materials for parents in addition to nurses and midwives, and focusing more on practical skills.

A lot of knowledge based on scientific evidence were given, but online seminar could not cover the practical part, such as clinical skills. It would be better to have more practical part to adopt in the real situation (participant in focus group discussion).

In the future we would like to develop a low-cost standardized model of MCH continuing education program and evaluation framework to implement in similar countries.

### **Implications for Nursing and Health Policy**

Perhaps the most important implication of the distance-learning program is for the policies of both developed and developing countries regarding collaboration and the use of technology to achieve this. One of the main findings of this research is the extent to which Mongolian nurses and midwives feel isolated from changes taking place in their disciplines in other parts of the world. The distance-education program illustrates that bridging geographical gaps is not necessarily a problem with the appropriate use of technology, and can have important positive effects in places where changes in policy and practice have hitherto been slow.

A number of those involved in the delivery of the distance education program – notably the Mongolian Nurses Association and the various universities who were involved in delivery of the program – have direct links to government and could be involved in lobbying for change with the three bodies who control this: the Ministry of Health, Ministry of Education and Registry Board for Nursing Licensure.

### **Conclusions**

The distance education program developed in Mongolia acts as an important corrective to the current dearth of opportunities for distance learning for MCH nurses in Mongolia. It was well received by participants, many of whom have used their learning to improve maternal and child health services and the teaching of these disciplines. There are a number of barriers to affecting change, both in terms of the teaching itself, and the way in which it is used. These need to be overcome before sustained change is possible.

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